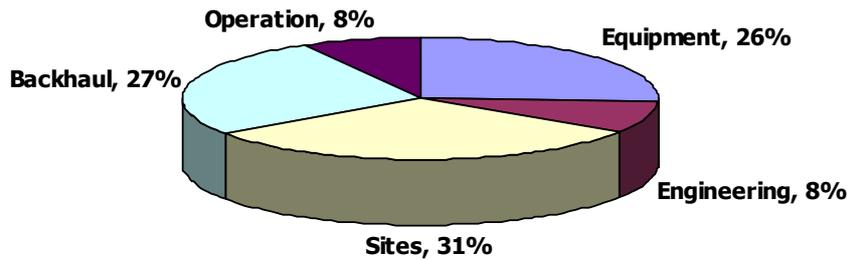


Cost Elements of City-wide WiFi Network - How Can You Lower Your Investment Costs?



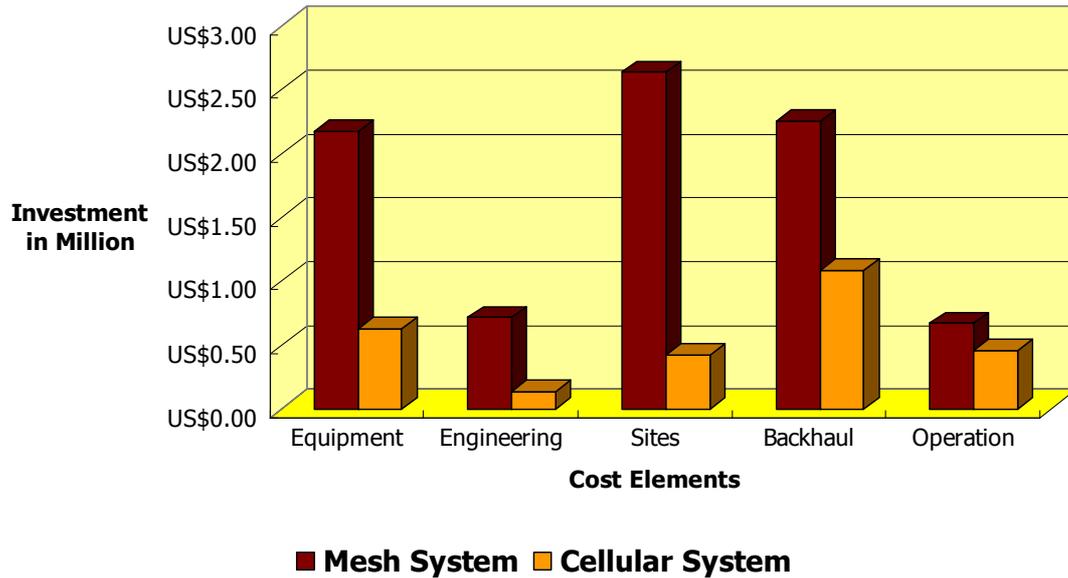
The investment cost of a city-wide WiFi project can be divided into 5 categories and all these cost elements related to the number of sites required to build up a city-wide network:

- Equipment Cost (Hardware and maintenance)
- Engineering Cost (Site planning, site survey, equipment installation and site construction)
- Site Cost (Site acquisition, rental and electricity)
- Backhaul Cost (Internet backbone setup and rental)
- Operation Cost (Network management systems, customer and organizational supports)

From this study, we can see that site cost and backhaul cost respectively occupies 31% and 27% of the total investment, being the two largest cost elements. Therefore, it can be seen that by choosing appropriate WiFi system that can lower these two cost elements, the total investment cost can be greatly reduced.

The two major backhaul architecture found in outdoor WiFi systems are mesh and cellular. While mesh architecture system uses self-healing network resilience to prevent single point of failure on backhaul, cellular system uses point-to-point or point-to-multi-point dedicated wireless backhauls with link integrity and backhaul resilience features. The inherit nature of mesh network is to share the same frequency channel by all the mesh nodes in a cluster. This will impose a lot of problems on throughput, hopping capability, latency and system capacity, the detail of which will not be discussed in this paper.

Cost Comparisons of Mesh and Cellular Systems



This paper shows that cellular system, the technology used by Altai A8 WiFi system, can provide much larger coverage in area per access point and therefore can reduce greatly (on average 84%) in the number of sites required for the same city coverage area. The implication is that all the above 5 cost elements can be reduced significantly. The result is that: **The total project investment cost (CAPEX and OPEX) can be cut by 68%. Only one third of total project investment is required!**

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